

June 12, 2007

MEMORANDUM

TO: Mr. Steve Murray, P.L.S. - Tippecanoe County Surveyor

FROM: David W. Eichelberger, P.E. - CBBEL, Indianapolis

SUBJECT: **Battle Ground Middle School
CBBEL Project No. 02-038 (EM)**

DEVELOPER/OWNER: **Tippecanoe School Corporation**

LOCATION: **40° 30' 22" Latitude
-86° 55' 07" Longitude**

RECOMMENDATION: **Final Approval**

The Tippecanoe School Corporation will develop 50 acres of land located on the northwest corner of County Roads 50 West and 600 North as a new middle school. Currently, the site is vegetated with row crops, grasses, and some trees and includes a barn-type structure to be removed. Approximately 1/3 of the property drains to the east through culvert pipes at C. R. 50 West and eventually discharges to Burnett Creek within an existing swale along the north side of C. R. 600 North. The majority of the site drains south to an existing 24-inch diameter culvert at C. R. 600 North via a natural depression. The Fred Hafner Regulated Drain flows through the middle of the site, as a closed tile system. Additionally, significant off-site watersheds north and west of the project site (approximately 400 acres) contribute to the runoff entering the regulated drain system. The 24-inch diameter culvert restricts the amount of stormwater that can be released downstream, creating a large on-site depressional storage area.

Under proposed conditions, the developed school property will contain four (4) interconnected dry-bottom stormwater detention ponds. The southeast pond will discharge to the east, and the other three ponds will drain to the south. The ponds draining to the south will be controlled by a proposed 3-foot by 6-foot box culvert. A 60-inch diameter concrete outfall pipe will extend from the box culvert to the open ditch portion of the Fred Hafner Regulated Drain, approximately 550 feet downstream.

A berm will be constructed along the western boundary of the school property to maintain the depressional storage immediately off-site to the west. Five 24-inch pipes will be installed in the berm to allow off-site water to be conveyed to the on-site south pond. Future development plans west of the school involve residential housing and the construction of two stormwater detention ponds to accommodate the large watersheds north and west of the school property. The south school pond will be part of a shared pond system which will cross property lines and incorporate wet-bottom and dry-bottom design elements unique to each site.

The proposed project will have a direct outlet to the Fred Hafner Regulated Drain, which traverses the site. It appears that the regulated drain easement will be relocated through the school property. There appear to be two proposed crossings of the new regulated drain easement. The project site is within the Tippecanoe County MS4 Area.

This project has been addressed in meetings held on August 24, 2005, December 8, 2005, January 3, 2006, and January 24, 2006, and addressed in an e-mail of the January 3, 2006 meeting minutes, dated January 5, 2005. This project also was previously reviewed in memorandums dated January 6, 2006, January 30, 2006, April 24, 2006, and May 18, 2007. This project received final approval with conditions at the February 2, 2006 Drainage Board meeting.

The applicant is now proposing to modify the approved outlet for the south pond. The approved drainage plan included the construction of a low berm in the south pond to pass off-site runoff directly to the pond outlet during high frequency storm events. The proposed modification eliminates the low berm within the south pond and allows the off-site stormwater runoff to receive stormwater quality treatment. The approved south detention pond outlet will be modified by installing a weir and low flow opening in the control section.

After a review of the most recently provided information, CBBEL recommends final approval of the stormwater management plan.

The applicant must pay any final drainage review fees per Ordinance 2005-04-CM. The applicant has submitted the "Commercial Property Recorded Master Covenant and Agreement Regarding On-Site BMP Maintenance and Drainage". This agreement must still be recorded. In addition, the meeting minutes from the February 2, 2006 Tippecanoe County Drainage Board meeting indicate that the Fred Hafner Regulated Drain relocation through the subject site was approved, subject to the Tippecanoe County Surveyor's Office (TCSO) final approval. It is not clear if the applicant has received final approval of the Regulated Drain relocation from the TCSO.

No error or omission in either the plans, calculations or applications (whether said plans, calculations or applications have been reviewed by the review engineer or not) shall permit or release the applicant and designer from constructing this work in any other manner than that provided for in the County Ordinance.

pc: TBIRD Design Services Corporation

DWE/sdb

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